ABSTRACT

An improved process for burning a fuel to produce a flue gas is disclosed. The fuel is burned in a main combustion zone in the presence of a main combustion oxidant to produce combustion products. The combustion products are mixed in a post-combustion zone positioned downstream from the main combustion zone. The post-combustion zone is provided with a recirculation zone positioned proximate to the main combustion zone and an injection zone positioned downstream from the recirculation zone. An post-combustion oxidant is injected into the combustion products in the injection zone. At least one of (a) the residence time of the combustion products in the post-combustion zone, (b) the temperature range of the combustion products contained within the injection zone and (c) the oxygen content of the oxidant is controlled to optimize the level of CO and NO_x in the flue gas.